Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A tissue removal device, comprising:

an elongate shaft having a distal end and a proximal end, wherein the elongate shaft defines a longitudinal axis;

a bag support defining an opening, the bag support being collapsible and expandable to open and close the opening;

a bag operatively attached to the bag support and being repositionable between an unfolded position, in which the bag extends away from the bag support, and a folded position, in which the bag is folded onto itself, the bag having a first edge and a second edge, an open first end operatively secured to the bag support and a closed end, the first end being connected to the support so that when the bag support is in [[the]] a collapsed position the bag opening is substantially closed; and

the bag having folds including at least one transverse fold~~, wherein the at least one transverse fold extends~~ extending at least partially from the first edge toward the second edge such that an angle less than 90° is defined relative to the longitudinal axis.

2. (Original) The tissue removal device of claim 1, further comprising a tube for receiving the shaft, bag support and bag.

3. (Original) The tissue removal device of claim 1, wherein the folds include folds approximately parallel with the longitudinal axis.

4. (Original) The tissue removal device of claim 1, further including a sheath disposed about the bag assembly.

5. (Original) The tissue removal device of claim 4, wherein the sheath includes a weakness for breaking away from the bag.

6. (Original) The tissue removal device of claim 4, wherein the sheath is fabricated from a flexible heat shrinking polymer.

7. (Original) The tissue removal device of claim 6, wherein the sheath is in the form of at least one of a mesh, net and lattice.

8. (Original) The tissue removal device of claim 4, further comprising an actuation system operatively connected to the sheath in order to facilitate removal of the sheath from the bag assembly.

9. (Previously Presented) The tissue removal device of claim 8, wherein the actuation system includes a tear line formed in the sheath to facilitate tearing of the sheath.

10. (Original) The tissue removal device of claim 9, wherein the actuation system includes a cord operatively connected to the tear line for facilitating the tearing of the sheath along the tear line.

11. (Original) The tissue removal device of claim 10, wherein the cord is connected to a control portion at the proximal end of the shaft.

12. (Original) The tissue removal device of claim 9, wherein the actuation system includes an expandable member positioned within the bag assembly.

13. (Original) The tissue removal device of claim 12, wherein expansion of the expandable member is initiated remotely from the bag.

14. (Original) The tissue removal device of claim 1, wherein the bag has a proximal edge and a distal edge and includes a slot formed in the vicinity of the bag support near the proximal edge to enable the diameter of the bag to be adjusted.

15. (Original) The tissue removal device of claim 14, wherein the bag includes a control line for drawing the slot closed.

16. (Original) The tissue removal device of claim 1, wherein the bag is conical in shape.

17. (Original) The tissue removal device of claim 1, wherein the bag is trapezoidal in shape.

18. (Original) The tissue removal device of claim 1, further comprising a control portion operatively coupled to the proximal end of the shaft.

19. (Currently Amended) A method of collapsing a bag of a tissue removal device, the method comprising the steps of:

providing a minimally invasive tissue removal device including:

a shaft having a distal end and a proximal end and defining a longitudinal axis;

a bag support; and

a bag attached to the bag support and being repositionable between an unfolded position, in which the bag extends away from the bag support, and a folded position, in which the bag is folded onto itself, the bag having a first edge and a second edge, an upper end operatively coupled to the bag support and a lower end[[,]]; and

folding the bag transversely with respect to the longitudinal axis such that ~~at least one~~ a first transverse fold is formed~~, wherein the at least one transverse fold~~ that extends at least partially from the first edge toward the second edge such that an angle less than 90° is defined relative to the longitudinal axis.

20. (Original) The method according to claim 19, wherein the bag is folded onto itself such that the proximal edge crosses the distal edge.

21. (Currently Amended) The method according to claim 19, wherein the step of folding the bag further ~~comprising~~ comprises folding the bag such that at least one subsequent fold is formed, the at least one subsequent fold being ~~so that the folds are~~ approximately parallel to the longitudinal axis.

22. (Original) The method according to claim 19, wherein the bag support has a collapsed position and an expanded position and further comprising closing the upper end of the bag using the support.

23. (Original) The method according to claim 22, wherein the bag is folded onto itself such that the proximal terminal edge of the bag is substantially parallel with the longitudinal axis.

24. (Original) The method according to claim 19, wherein the bag is folded onto itself such that the proximal terminal edge of the bag is substantially aligned with the longitudinal axis.

25. (Original) The method according to claim 20, wherein the bag is folded so that a portion of the bag is disposed distally of a distal end of the support.

26. (Original) The method according to claim 19, further comprising the step of placing the folded bag and bag structure into a sheath.

27. (Original) The method according to claim 26, wherein the sheath includes a weakness and further comprising tearing the sheath at the weakness so as to release the bag.

28. (Currently Amended) A minimally invasive tissue removal device for passage through a cannula, the device comprising:

an elongate shaft having a distal end portion and a proximal end portion, the elongate shaft defining a longitudinal axis; and

a bag assembly operatively coupled to the distal end portion of the shaft, the bag assembly including:

a bag support structure having a first position and a second position; and

a bag configured for repositioning between an unfolded position, in which the bag extends away from the bag support, and a folded position, in which the bag is folded onto itself, the bag having an upper end and a lower end, the upper end having an open position and a closed position and being operatively secured to the bag support such that when the bag support is in the ~~first~~ open position, the upper end of the bag is substantially open and when the bag support is in the ~~second~~ closed position, the upper end of the bag is substantially closed;

the bag being folded over onto itself so as to form at least one transverse fold defining a fold axis, wherein the fold axis defines an angle between 0° and 90° relative to the longitudinal axis such that an axial length of the bag assembly is increased and a cross-sectional profile of the bag assembly is minimized when the bag is in the folded position.

29. (Previously Presented) The tissue removal device according to claim 28, further comprising a removable sheath disposed about the bag assembly when in the bag is in the folded condition.

30. (Original) The tissue removal device according to claim 29, wherein the bag has a proximal edge and a distal edge and wherein the bag is folded such that the proximal edge is substantially aligned with the longitudinal axis.

31. (Currently Amended) A minimally invasive tissue removal device for passage through a trocar, the device comprising:

an elongate shaft having a distal end portion and a proximal end portion, the elongate shaft defining a longitudinal axis;

a bag support at the distal end of the shaft having a first position and a second position, the bag defining a plane in the first position; and

a bag having an open end and a closed end opposite the open end, the bag extending along a bag axis which is perpendicular to the longitudinal axis, the bag having an open position and a closed position and being configured for repositioning between an unfolded position, in which the bag extends away from the bag support, and a folded position, in which the bag is folded onto itself;

wherein the bag is folded over onto itself ~~such that the~~ so as to form at least one fold extending along an axis ~~of the fold~~ that is substantially non-parallel and non-orthogonal to the longitudinal axis of the shaft.

32. (Original) The tissue removal device of claim 31, wherein the bag is folded into a cylinder adjacent the bag support.

33. (New) A method of collapsing a bag of a tissue removal device, the method comprising the steps of:

providing a minimally invasive tissue removal device having a bag assembly including:

a shaft defining a longitudinal axis;

a bag support disposed at a distal end of the shaft; and

a bag attached to the bag support, the bag being repositionable between an unfolded position, in which the bag assembly defines an initial longitudinal dimension, and a folded position, in which the bag assembly defines a subsequent longitudinal dimension, the subsequent longitudinal dimension being greater than the initial longitudinal dimension; and

folding the bag such that a first fold is formed, the first fold extending transversely with respect to the longitudinal axis.

34. (New) The method according to claim 33, wherein the step of folding the bag further comprises folding the bag such that at least one subsequent fold is formed, the at least one subsequent fold extending along an axis that is approximately parallel to the longitudinal axis.

35. (New) The method according to claim 34, wherein the step of folding the bag such that at least one subsequent fold is formed includes folding the bag such that a cross-sectional profile of the bag assembly is minimized when the bag is in the folded position.